

What is claimed is:

1. A preformed metacarpal fracture brace, comprising:

a one-piece semi-rigid molded outer shell contoured to conform to an outside portion of a wrist and hand of a wearer, said outer shell comprising a proximal section adapted to immobilize the wrist in an extension position and a distal section extending at an angle to the proximal section and adapted to immobilize at least the fourth and fifth metacarpals of the hand in a functional position at said angle;

a soft inner shell applied to an inside portion of said outer shell; and

a plurality of straps connected to said outer shell adapted to secure said brace onto said wearer.

2. A brace in accordance with claim 1, wherein said outer shell has a C-shaped cross-section.

3. A brace in accordance with claim 2, wherein said outer shell extends in a longitudinal direction from above the wearer's wrist to the tips of the wearer's fingers.

4. A brace in accordance with claim 3, wherein:

said proximal section of said outer shell extends in a direction transverse to the longitudinal direction at least from the outside portion of the wearer's wrist to approximately a midpoint of the wrist; and

said distal section of said outer shell extends in said transverse direction at least from the outside portion of the wearer's hand over said fourth metacarpal.

5. A brace in accordance with claim 2, wherein said outer shell is open-ended along its width at a distal end and at a proximal end.

6. A brace in accordance with claim 1, wherein said angle comprises an angle in the range between 80 to 90 degrees.

7. A brace in accordance with claim 1, wherein said outer shell is comprised of malleable plastic.
8. A brace in accordance with claim 1, wherein said straps comprise Velcro straps.
9. A brace in accordance with claim 1, wherein said outer shell is conformed to the contours of the wearer's wrist and hand by heat-treating said outer shell after said brace is applied to said wearer.
10. A brace in accordance with claim 1, wherein said outer shell of said brace is adapted to be trimmed to conform to a wearer's hand and wrist.
11. A brace in accordance with claim 1, wherein the proximal portion of the outer shell is adapted to be separated from the distal portion by cutting.
12. A brace in accordance with claim 1, wherein:
 - a first strap secures the brace above the wrist of the wearer;
 - a second strap secures the brace around a palm portion of the wearer's hand; and
 - a third strap secures the brace around fingers of the wearer.
13. A brace in accordance with claim 1, wherein said outer shell is formed using a vacuum molding process.
14. A method of treating metacarpal fractures, comprising:
 - applying a preformed metacarpal brace to an injured hand and adjacent wrist, said metacarpal brace comprising:
 - a one-piece semi-rigid molded outer shell contoured to conform to an outside portion of the wrist and hand, said outer shell comprising a proximal section adapted to

immobilize the wrist in an extension position and a distal section extending at an angle to the proximal section and adapted to immobilize at least the fourth and fifth metacarpals of the hand in a functional position at said angle;

a soft inner shell applied to an inside portion of said outer shell; and

a plurality of straps connected to said outer shell adapted to secure said brace onto a wearer; and

tightening said brace around said wrist and hand using said straps in order to secure the brace to the wearer and to immobilize said wrist and said fourth and fifth metacarpals.

15. A method in accordance with claim 14, wherein said outer shell has a C-shaped cross-section.

16. A method in accordance with claim 15, wherein said outer shell extends in a longitudinal direction from above the wearer's wrist to the tips of the wearer's fingers.

17. A method in accordance with claim 16, wherein:

said proximal section of said outer shell extends in a direction transverse to the longitudinal direction at least from the outside portion of the wearer's wrist to approximately a midpoint of the wrist; and

said distal section of said outer shell extends in said transverse direction at least from the outside portion of the wearer's hand over said fourth metacarpal.

18. A method in accordance with claim 15, wherein said outer shell is open-ended along its width at a distal end and at a proximal end.

19. A method in accordance with claim 14, wherein said angle comprises an angle in the range between 80 to 90 degrees.

20. A method in accordance with claim 14, wherein said outer shell is comprised of malleable plastic.
21. A method in accordance with claim 14, wherein said straps comprise Velcro straps.
22. A method in accordance with claim 14, further comprising:
 heat-treating said outer shell to conform the outer shell to the contours of the wearer's wrist and hand.
23. A method in accordance with claim 14, further comprising trimming said outer shell of said brace to conform the brace to a wearer's hand and wrist.
24. A method in accordance with claim 14, further comprising:
 separating the proximal portion of the outer shell from the distal portion by cutting after a predetermined initial healing period; and
 removing the proximal portion of the brace in order to allow wrist movement while maintaining immobilization of the fourth and fifth metacarpals.
25. A method in accordance with claim 14, further comprising:
 tightening a first strap to secure the brace above the wrist of the wearer;
 tightening a second strap to secure the brace around a palm portion of the wearer's hand; and
 tightening a third strap to secure the brace around fingers of the wearer.
26. A method in accordance with claim 14, wherein said outer shell is formed using a vacuum molding process.

27. A method in accordance with claim 14, wherein said brace is applied after a predetermined initial healing period during which the hand and wrist are immobilized using a cast.